

(12) UK Patent Application (19) GB (11) 2 333 778 (13) A

(43) Date of A Publication 04.08.1999

(21) Application No 9814445.4

(22) Date of Filing 06.07.1998

(30) Priority Data

(31) 98400188

(32) 29.01.1998

(33) EP

(71) Applicant(s)

Reckitt & Colman France

(Incorporated in France)

15 rue Ampère, BP83-91301 Massy Cedex, France

(72) Inventor(s)

Christophe Perthuisot

Véronique Mathieu

(74) Agent and/or Address for Service

E A Hott,

Reckitt & Colman Plc. Group Patents Department,

Dansom Lane, HULL, HU8 7DS, United Kingdom

(51) INT CL⁶

C11D 17/00

(52) UK CL (Edition Q)

C5D DDA D123 D183

(56) Documents Cited

US 4683072 A

(58) Field of Search

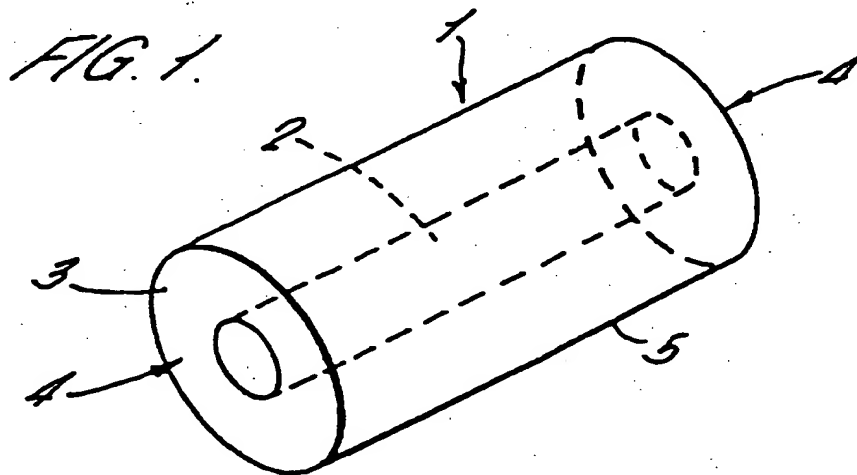
UK CL (Edition P) C5D DDA DHX DHZ DJX D123 D183

INT CL⁶ A61L 9/01, C11D 17/00

(54) Abstract Title

A lavatory block

(57) A lavatory cleansing block having a perceived approximately constant intensity of fragrance throughout the life of the block, comprises an inner region 2 comprising an inner fragrance and an outer region 3 comprising an outer fragrance which is different from said inner fragrance, the inner fragrance being present in a concentration by weight which is less than or equal to 1.1 times the concentration of the outer fragrance.



BEST AVAILABLE COPY

GB 2 333 778 A

11

FIG. 1.

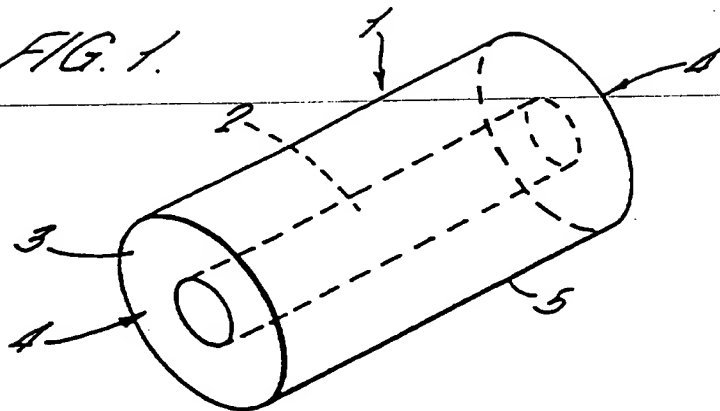


FIG. 2a.

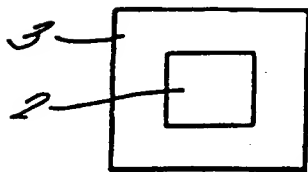


FIG. 2b.

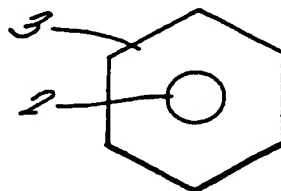


FIG. 2c.

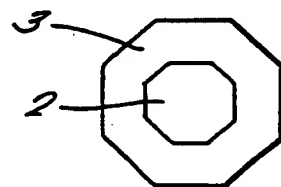


FIG. 3.

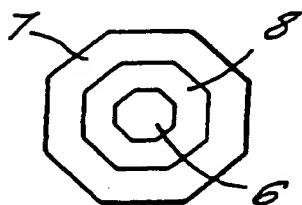
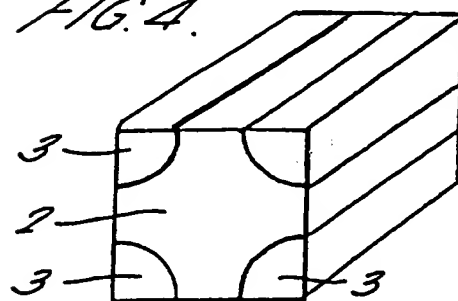


FIG. 4.



A LAVATORY BLOCK

The present invention relates to lavatory cleansing blocks, their use and a method for their preparation.

5

Solid lavatory cleansing blocks are well known in the art. Such blocks are typically designed to release active materials, including fragrance (or perfume), throughout their life. For example ITB (in the bowl) lavatory cleansing blocks are known which are hung from the rim of the lavatory bowl in a conventional container and which are designed to release fragrance and cleansing components upon dissolution of the block when the toilet is flushed. Additionally ITC (in the cistern) lavatory blocks are known for cleansing toilet systems; such block is placed in the cistern so that when the toilet is flushed cleansing components are released with the flush water into the toilet bowl.

20

Such lavatory cleansing blocks are conventionally based on a single homogenous formulation, which typically comprises a mixture of one or more bleaching agents, surfactants, fragrances and binders.

25

A disadvantage with such blocks is that a constant release of active materials throughout the life of the block cannot be achieved. The rate of release of an active material is linked not only to the concentration of the active material in the block but also to the size of the block. Thus a reduction in the surface area of the block during the life thereof will result in a reduction in the level of release of the active material.

35

WO 96/14392 (Henkel KG) discloses a cleanser in bar form for flush toilets, consisting of at least two different aggregates placed together, whereby one of the aggregates is at least partially enclosed by the other aggregate or aggregates, wherein the enclosed aggregate and at least one of the other aggregates contain at least a same active ingredient, whereby the concentration of at least one of these active ingredients in the enclosed aggregate is at least 1.3 times the concentration of the same active ingredient in the enclosing aggregate or aggregates.

The above active ingredient may be, for example, a perfume. Water penetrates into a lavatory block during use of the block. Towards the end of its life, a block may contain a significant proportion of water. Thus, in the case of the above block, the fragrance, which is the same in both regions of the block, will nevertheless not perform in the same way throughout the entire life of the block as the block absorbs more and more water. Furthermore it is known that the amount of fragrance contained in a formulations is key to determining the final rheology of the paste. If the same fragrance is present in two formulations in different amounts as in the above block, the rheologies may be vastly different such that co-extrusion of the two regions would be very difficult without readjusting the rheology of the two pastes.

We have now devised a block comprising at least two regions which is suitable for use as a lavatory cleanser and which allows active ingredients to be released from the block at a relatively constant rate over time in which the concentration of the fragrance

in the inner region is not significantly greater than the concentration of the fragrance in the outer region. Since different fragrances are used in the inner and outer regions it is possible to use
5 fragrances which take into account the problem of water penetration into the block. A fragrance can be used in the inner region which is more easily delivered from a wet block. Furthermore the rheologies of the inner and outer phases can be more easily
10 controlled.

The present invention provides a lavatory cleansing block having a perceived approximately constant intensity of fragrance throughout the life of the
15 block, which comprises an inner region comprising an inner fragrance and an outer region comprising an outer fragrance which is different from said inner fragrance, the inner fragrance being present in a concentration by weight which is less than or equal to
20 1.1 times the concentration of the outer fragrance.

The present invention also provides the use of a block as defined above as a lavatory cleansing block.

25 The present invention additionally provides a method of preparing a block as defined above which comprises extruding the inner region and outer region to form a solid block.

30 In the attached drawings:

Figure 1 is a schematic perspective view of a lavatory block of the present invention.

Figures 2a, 2b, 2c and 3 are schematic cross-sectional views of further blocks of the present invention.

35 Figure 4 is a schematic perspective view of a further

lavatory block of the present invention.

The block of the present invention may be used, for example, as an ITB or ITC block.

5

The block of the present invention may contain active materials of the usual type contained in lavatory cleansing blocks. Thus each region or all regions contain at least one of a surfactant, bleaching agent and anti-limescale agent. Each region may also
10 comprise at least one other material such as a dye or colourant, preservative, binder, filler and/or solubility control agent.

15

Examples of surfactants are anionic, cationic and non-ionic surfactants. Examples of anionic surfactants are alkali metal salts of alkyl substituted benzene sulfonic acids, alkali metal salts of long chain fatty sulfates, alkali metal salts of long chain fatty
20 sulfonates, alkali metal ether sulfates derived from alcohols and alkyl phenols, alkali metal sulfosuccinates and alkali metal sarcosinates. Examples of cationic surfactants are quaternary ammonium bromides and chlorides containing a long
25 chain alkyl group such as benzalkonium chloride. Examples of non-ionic surfactants are those of the betaine or imidazoline types.

30

Examples of bleaching agents are solid halogen release agents such as alkali metal or alkaline earth metal hypochlorites, halogenated isocyanuric acid and alkali metal salts thereof and chlorinated dimethyl
hydantoin. Peroxy and perborate compositions may be contemplated in appropriate formulations.

35

Examples of anti-limescale agents are phosphonates, phosphates, formates and citrates. The counter ion may be, for example, silver or zinc. Zeolites may also be used.

5

Examples of dyes and colourants are yellow colourants such as Solvent Yellow 98 from Hoechst or Solvent Blue 70 from BASF. The choice of colour is arbitrary and any suitable colourants known in the art may be used.

10

Examples of preservatives are IRGASAN DP 300 (trade mark) from Ciba Geigy or VENTOCIL IB (trade mark) from Zeneca.

15

Examples of binders are starch, starch derivatives, cellulose ethers and polyethylene glycol ethers.

Examples of fillers are sodium sulfate and silica.

20

The rate of dissolution of each region of the block may be controlled by the optional addition to these regions of at least one solubility control agent.

25

Suitable solubility control agents usually include materials having a solubility which is lower than readily soluble components (principally surfactants) of the regions. Such solubility control agents may vary in nature from substantially wholly water-soluble materials to materials having a low solubility in

30

water. The solubility control agent may be present in different amounts in the inner region and the outer region, and/or different solubility control agents may be present in the inner region and the outer region.

35

Examples of substantially insoluble solubility control agents are paradichlorobenzene, waxes such as beeswax,

carnauba wax and petroleum waxes, long chain fatty acids and alcohols and esters thereof and fatty alkylamides. Solubility control agents of limited aqueous solubility may also be used; examples thereof are known to those skilled in the art. Typically these can include various non-ionic surfactants. Suitable solubility control agents are those which can withstand the conditions of manufacture of the block (for example the pressure and temperature used in an extrusion process).

The block of the present invention comprises at least an inner region and an outer region. The inner region is at least partially encapsulated by the outer region. There may be one or more inner regions and/or one or more outer regions. For example there may be one inner region and one, two three or four or more outer regions. Generally at least 50% of the surface area of the inner region is covered, preferably from 50% to 100%, more preferably from 65% to 90%, even more preferably from 68.5% to 88.5%. At least one intermediate region may, for example, be present between the inner region and the outer region. Further regions may, for example, be present inside the inner region or outside the outer region. The weight ratio of the inner region to the outer region is desirably 0.05:1 to 5:1, preferably 0.3:1 to 0.8:1, more preferably 0.45:1 to 0.7:1. If an intermediate region is present, the weight ratio of the intermediate region to the outer region is generally from 0:1 to 0.8:1, preferably from 0.47:1 to 0.667:1.

Each of the active ingredients may be present in the same or different concentrations in the different regions of the block depending on the effect desired.

For instance any of the active ingredients may be present in a greater or less concentration in the inner region than in the outer region. For a more constant rate of release of a particular active material, it should be present in a greater concentration in the inner region than in the outer region. Some ingredients may be present in both the inner and outer regions, or only in the inner region or only in the outer region. Thus the same or different active materials may be released at different stages of the block's use life, and the rate of release of each active material can be controlled.

The inner and outer regions of the block may, for example, contain the following proportions of ingredients. Apart from the fragrance the inner and outer regions may have the same or different formulations:

	<u>Component</u>	<u>% by weight</u>
20	Anionic surfactants	0 to 70%
	Cationic surfactants	0 to 15%
	Non-ionic surfactants	0 to 20%
	Bleaching agents	0 to 30%
25	Anti-limescale agents	0 to 20%
	Dyes or colourants	0 to 20%
	Preservatives	0 to 5%
	Binders	0 to 25%
	Fillers	0 to 50%
30	Fragrance	1 to 30%

In the block of the present invention it is possible to achieve a perceived approximately constant intensity of release of fragrance throughout the life of the block. The perception of the intensity of a

particular fragrance depends on a number of factors,
for example its concentration and its sensory
properties. The sensory properties of a fragrance
depend, for example, on its perception threshold and
volatility. Usually a fragrance with a higher
volatility and/or lower perception threshold will be
considered to be more intense. Typically a fragrance
is made up of a number of individual fragrance
components. It is impossible to measure the intensity
of a fragrance by a scientific method. Accordingly
the intensity of a fragrance is measured by tests
using consumers and/or panellists.

The intensity of a fragrance in a lavatory block can
be measured by the following standard method.

Two sample lavatory blocks are taken and weighed. One
of the blocks are then placed in a cage and placed on
a rotating disk. The disk is rotated at 10 rpm under
a water shower having a temperature of 30°C. The
weight of the block is recorded regularly until it has
lost 75% of the block weight. This generally takes
about 90 minutes. At this stage the block consists
only of the inner region since the entire outer region
has been washed away. At the very end the second
block is added, just to be wetted for 2 to 3 minutes.

The two blocks are left at room temperature for 1
hour. At the same time two olfaction cabins measuring
 $0.80 \times 1.20 \times 2.60 = 2.5 \text{ m}^3$ and having placed therein
a toilet bowl and cistern are ventilated for 1 hour.
The ventilation is then stopped and the two blocks are
disposed in separate cabins on the rim of the toilets.
The toilets are flushed once and left in the cabin for
1 hour, following which a panel of 20 to 30 people are

asked to evaluate the fragrancing strength by smelling through small window of each cabin. Each panel member indicates the cabin where the fragrance is strongest.

5 This method can quickly and simply show whether a lavatory block has a perceived approximately constant intensity of fragrance throughout the life of the block.

10 A block is considered to have perceived approximately constant intensity of fragrance throughout the life of the block if the following formula is met:

$$| I - O | \leq 15$$

15 wherein I = percentage of panellists considering inner region has greatest intensity
O = percentage of panellists considering outer region has greatest intensity.

20 Preferably, $| I - O | \leq 10$, more preferably ≤ 7 .

25 Thus a block in which 42.5% of panellists consider that a block with no wear has the greatest fragrance and in which 57.5% of panellists consider that the block with 75 wt. % wear has the greatest fragrance, or vice versa, meets the requirement of perceived approximately constant intensity.

30 The scents of the fragrances in the inner and outer regions may be the same or different. The fragrances may, for example, be chosen to produce a substantially similar scent in the inner and outer regions, and in any other regions which may be present, in which case the block will have a substantially constant scent and
35 intensity of scent throughout its life. The

fragrances may also, for example, be chosen to produce different scents in the inner and outer regions, and in any other regions which may be present, in which case the block will have different scents at the beginning of its life and at the end of its life, but still have a substantially constant intensity of scent throughout its life. This may be useful to act as an indication to the consumer that the block has reached the end of its useful life.

10 In the present invention the concentration of a fragrance is to be understood as being the total concentration of the individual fragrance components within the fragrance. The solvent used, if any, is not included in the calculation unless it itself has a fragrance, ie it acts as an individual fragrance component. For example terpenes (for example of orange or lemon, or terpineol) and phenyl ethyl alcohol act as solvents, but have an olfactive impact and are therefore considered to be fragrance components in the context of the present invention. The concentration of a fragrance in a block can be measured by extracting the liquid in the block and analysing it. A suitable method is chromatography in which each raw material may be identified and quantified.

30 In general a fragrance is made up of a number of individual components, each of which has its own scent and intensity. The inner fragrance and the outer fragrance may have no individual components in common, or may have at least one individual component in common.

35 Thus there may be, for example, at least one

individual component in common between the inner and outer fragrances. The individual components in common may make up, for example, up to 95 wt% of each fragrance. The relative concentrations of the individual components within the inner fragrance and the outer fragrance does not form an essential aspect of the present invention. Each of the individual components in common may be present in the inner and outer fragrances in substantially the same concentrations, or may be present in a greater concentration in either the inner fragrance or the outer fragrance.

Thus in a first embodiment of the present invention the outer fragrance consists of 100 wt% fragrance component A (wherein fragrance component A contains at least one individual fragrance). The inner fragrance consists of fragrance component A and fragrance component B (wherein fragrance component B is made up of at least one individual fragrance, none of which is present in fragrance component A). Fragrance component B provides a stronger scent. The inner fragrance may consist of, for example, at least 50 wt% fragrance component A, preferably at least 75 wt% fragrance component A, more preferably at least 90 wt% fragrance component A, even more preferably about 95 wt% fragrance component A, the balance being fragrance component B.

In a second embodiment of the present invention, the inner fragrance consists of fragrance components A and B (as defined in the first embodiment) and the outer fragrance consists of fragrance component A (as defined in the first embodiment) and fragrance component C (wherein fragrance component C is made up

of at least one individual fragrance, none of which is present in fragrance components A or B). Fragrance component C may provide a more sophisticated scent, and is of a lesser intensity, than fragrance component B. The inner and outer fragrances may consist of, for example, at least 50 wt% fragrance component A, preferably at least 75 wt% fragrance component A, more preferably at least 90 wt% fragrance component A, even more preferably about 95 wt% fragrance component A, the balances being fragrance component B for the inner fragrance and fragrance component C for the outer fragrance.

In order to chose appropriate inner and outer fragrances for testing by consumers or panellists, an appropriate master fragrance may be prepared from individual fragrances. This master fragrance may be used, for example, as the outer fragrance. One or more further individual fragrances may then be added to form the inner fragrance. If desired, one or more individual fragrances may also be removed to modify the scent of the outer fragrance. It is possible, for example, to add individual fragrances to form the inner fragrance which are perceptually similar to the individual fragrances removed to form the outer fragrance. Another possibility is to prepare a master fragrance and add one or more individual fragrances to it to form the inner fragrance and one or more different individual fragrances to it to form the outer fragrance. The consumers or panellists may test the pairs of inner and outer fragrances throughout this procedure in order to arrive at an appropriate pair of fragrances with approximately the same intensities.

The inner fragrance is present in the inner region of the block of the present invention in a concentration which is less than or equal to 1.1 times the concentration of the outer fragrance in the outer region. In one embodiment the inner fragrance is present in a concentration which is less than or equal to the concentration of the outer fragrance, for example in a concentration of 0.75 to 1.0 times, preferably 0.8 to 0.9 times, the concentration of the outer fragrance. In another embodiment the concentration of the inner fragrance is approximately equal to the concentration of the outer fragrance, for example from 0.95 to 1.05, preferably 0.98 to 1.02, the concentration of the outer fragrance.

The concentration of the inner fragrance is, for example, from 1 to 30 wt%, preferably from 7 to 30 wt%, more preferably from 7 to 15 wt%, based on the total weight of the inner region. The concentration of the outer fragrance is, for example, from 1 to 30 wt%, preferably from 7 to 30 wt%, more preferably from 7 to 15 wt%, based on the total weight of the outer region.

The inner and outer fragrances, and the individual fragrances thereof, may be used in the absence or presence of a solvent. As indicated above, the concentrations and relative amounts of the various fragrances mentioned herein do not include the solvent. A solvent is in general used. Suitable solvents include those generally used for fragrances, such as ketones, alcohols and ethers. These solvents are known to those skilled in the art.

The block of the present invention may be prepared,

for example, by extrusion. Formulations for the different regions may be extruded to form a rod or bar which is then cut into appropriately sized pieces or blocks.

5 Suitably the ingredients of each formulation are fed into separate screw-mixer-extruders. In each mixer the ingredients are conveyed to the inside of the barrel by the rotation of the screws. Each different
10 formulation is then pushed outside its respective barrel towards the compression chamber. In this chamber the different formulations can be joined to each other. For example, the different formulations can exit the die one inside another, which is so
15 called axial extrusion.

Preferably two formulations are fed into two separate twin-screw-mixer-extruders, and the two formulations are joined to each other by axial co-extrusion.

20 For a better understanding of the invention, and to show how the invention may be put into effect, reference will be made to the drawings.

25 Referring to Figure 1, there is illustrated a lavatory block of generally cylindrical shape. The block includes an inner region 2 and an outer region 3. The block is preferably formed by co-extrusion of differing formulations by means known in the art, such
30 as the screw-mixer-extruders mentioned above. Inner region 2 comprises the inner fragrance and outer region 3 comprises the outer fragrance. Thus a substantially constant intensity (ie release) of fragrance may be perceived by the consumer throughout
35 a major portion, or substantially all, of the use life

of the block. The fragrances in the inner region 2 and the outer region 3 may have substantially the same or different scents.

5 Inner region 2 may also comprise a formulation including at least one different active ingredient (for example a bleach or dye) from the formulation of outer region 3. Alternatively the inner region 2 may
10 comprise a formulation including the same active ingredients as those in outer region 3, either at the same or different concentrations.

In a preferred embodiment of the present invention inner region 2 comprises a formulation including at
15 least one active ingredient at a higher concentration than the same active ingredient in the formulation of outer region 3. For example inner region 2 may comprise a dye at a higher concentration than the dye in outer region 3, or inner region 2 may contain a
20 different dye from that in outer region 3. When inner region 2 comprises a higher level of dye than that in outer region 3 it is possible to achieve a substantially constant level of dissolution of dye into the flush water of the lavatory throughout a
25 major portion, or substantially all, of the use life of the block. When regions 2 and 3 comprise different dyes, an end of life indicator may be provided when outer region 3 is substantially completely dissolved and the dye of inner region 2 predominates.

30 In the extrusion process for the formation of blocks, the formulations of regions 2 and 3 are co-extruded from the extrusion die to form a bar or rod. The bar or rod is then cut substantially perpendicularly to
35 its major axis to form individual blocks with end

faces 4. In use outer region 3 is, at least initially, exposed to the flush water of the lavatory at end faces 4 and outer surface 5 whereas inner region 2 is exposed to flush water, at least initially, only at end faces 4. It can thus be seen that by appropriate selection of the relative thicknesses of regions 2 and 3, inner region 2 may be exposed to the flush water to only a minor extent until a significant or substantial portion of outer region 3 has been dissolved away. A person skilled in the art is able to select the relative thicknesses of regions 2 and 3 in order to achieve desired respective rates of dissolution of the regions 2 and 3 and thereby to achieve desired rates of release of active ingredients and fragrances contained in these regions.

The rate of dissolution of the regions 2 and 3 may also be controlled by the optional addition to the formulations of these regions of solubility control agents.

By means of the extrusion process, blocks of the present invention may be produced in a variety of shapes. Examples of shapes are illustrated in Figures 2a, 2b and 2c, which show rectangular or square, hexagonal and octagonal cross sections. Other shapes, which may be selected in accordance with their functional and/or aesthetic qualities, may be chosen by those skilled in the art. In Figures 2a, 2b and 2c, reference numeral 2 is used to indicate the inner region and reference numeral 3 is used to indicate the outer region.

In Figure 3 there is illustrated a block including an inner region 6, an outer region 7 and an intermediate

region 8. The regions 6, 7 and 8 may include different active ingredients or may include the same active ingredients at different concentrations. For example inner region 6 may include a dye at a higher concentration than in intermediate region 8 which in turn includes the dye at a higher concentration than in outer region 7. Such a construction provides an even more constant release of active ingredient through the use life of the block. In an alternative construction according to Figure 3, intermediate region 8 may provide a barrier layer between two incompatible components. Thus one incompatible component may be provided in inner region 6 and another incompatible component may be provided in outer region 7. Diffusion of one incompatible component into the other is prevented by intermediate region 8. Examples of incompatible components which may be provided in the separated regions 6 and 7 include bleaching agents and some fragrances and/or dyes, where the bleaching agent may react chemically with the fragrance or dye resulting in a loss or change in scent or colour.

In Figure 4 there is illustrated a lavatory block of generally square cross section. The block includes an inner region 2 and four quarter circular outer regions 3 forming a star-in-a-square pattern. The block may be, for example, about 24mm x 24mm x 60mm, with the radius of each corner quarter circle being about 11mm. The block is preferably formed by co-extrusion as mentioned above.

The present invention also provides a lavatory cleansing block having a perceived increase in intensity of fragrance throughout the life of the

block, which comprises an inner region comprising an inner fragrance and an outer region comprising an outer fragrance which is different from said inner fragrance, the inner fragrance being present in a concentration by weight which is less than or equal to 1.1 times, preferably 1.0 times, the concentration of the outer fragrance.

All of the above features of the invention apply equally to this embodiment of the invention with the exception of the formula concerning the perceived intensity. In this embodiment of the invention, a block is considered to have a perceived increase in intensity of fragrance throughout the life of the block if the following formula is met:

$$I-O>0$$

wherein I and O are as defined above.

Preferably, $I-O>10$, more preferably >15 and even more preferably >25 , for example >40 or >60 . As an extreme case, $I-O = 100$.

The present invention is now further described in the following Examples.

Example 1

A pair of citrus fragrances, ie an inner fragrance and an outer fragrance, were prepared by mixing the following individual components in the amounts indicated. The amounts are all given in parts by weight.

TABLE 1

	Individual Fragrance	Outer	Inner
	Decanal	80	80
5	Citral	80	80
	Orange Terpenes	100	100
	Dihydromyrcenol	250	200
	Cyclacet	20	20
	Allyl Amyl Glycolate	8	8
10	Methyl dehydro Jasmonate	155	150
	Methyl Nonyl Acetaldehyde		10
	Grapefruit Essential Oil		280
	Lemon Terpenes	280	
	Methyl Pamplermousse		6
15	Isobornyl Acetate		62
	Basil Essential Oil	7	
	Galbanum Essential Oil	10	
	Rhubofuran		1
	Stemone		3
20	Citronellol	10	
	TOTALS:	1000	1000

Example 2

25 A pair of fragrances, ie an inner fragrance and an outer fragrance, were prepared by mixing the following individual components in the amounts indicated. The weights are all given in parts by weight.

TABLE 2

	Individual Fragrance	Parts by Weight	
		Outer	Inner
	Benzyl Acetate	5.0	4.0
5	Citronellol	12.0	10.0
	Fruit Complex TG	12.0	7.0
	Geranium Synthetic	-	3.0
	Hexyl Cinnamic Aldehyde	10.0	10.0
	Jasmacyclene/Verdyl Acetate	12.0	10.0
10	Jasmpyrane Forte	-	10.0
	Jasmin Synthetic TG	4.0	3.0
	Linalol	10.0	6.0
	Methyl Ionone Gamma	5.0	5.0
	Phenyl Ethyl Alcohol	10.0	10.0
15	Rose Synthetic TG	8.0	5.0
	Terpineol	12.0	12.0
	Boisvelone/Iso E Super	-	5.0
	TOTALS:	100.0	100.0

Example 3

A pair of rose fragrances, ie an inner fragrance and an outer fragrance, were prepared by mixing the following individual components in the amounts indicated. The weights are all given in parts by weight.

TABLE 3

Outer		Inner	
Aldehyde C-10 Decyl	2.00	Aldehyde C-11 Undecylenic	1.50
Aldehyde C-12 MNA	0.50	Aldehyde C-9 Nonylanic	1.00
Eugenal	4.00	Citronellol	17.50
Phenyl Ethyl Alcohol	22.50	Rose Oxide	1.00
Citronellol	20.00	Cedarwood	7.00
Sandalore	2.00	Euganol	3.00
Tricyclal	1.00	Phenyl Ethyl Alcohol	22.50
TOTALS:	52.00		53.50

Example 4

A pair of muguet fragrances, ie an inner fragrance and an outer fragrance, were prepared by mixing the following individual components in the amounts indicated. The amounts are all given in parts by weight.

TABLE 4

Outer		Inner	
Aldehyde C-11 Undecylenic	1.00	Aldehyde C-12 MNA	1.00
Aldehyde C-10 decyl	1.00	Lillal	10.00
Hydroxycitronellal	10.00	Rosalva	1.00
Citronellol	20.00	Nerol	20.00
Skatole 10% DPG	1.00	Indole 10% DEP	1.00
Phenyl ethyl alcohol	45.00	Geraniol	45.00
Cedar wood oil virg.	10.00	Sandalwood oil	10.00
Cyclogalbanate	2.00	Tricyclal	2.00
Vanillin	5.00	Ethyl Vanillin	5.00
Eugenol	5.00	Methyl Cinnamate	5.00
TOTALS:	100.00		100.00

Skatole 10% DPG = skatole containing 10% of
dipropylene glycol (a solvent)
Indole 10% DEP = indole containing 10% of
diethylene phthalate (a solvent)

5

Example 5

A pair of lemon fragrance, i.e. an inner and an outer
fragrance, were prepared by mixing the following
individual components in the amounts indicated. The
amounts are all given in parts by weight.

TABLE 5

Outer		Inner	
Aldehyde C 8	40	Aldehyde C 8	40
Aldehyde C 10	40	Aldehyde C 10	40
Aldehyde MNA	10	Aldehyde MOA	20
Citral pure	100	Litsea Cubeba	150
Geranyl nitrile	50	Geranyl nitrile	50
Citronella oil	300	Citronellal	384
Orange oil	50	Orange terpenes	100
Geraniol	100	Citronellol	130
Diphenyl oxide	20	Diphenyl methane	30
Benzyl Salicylate	30	Benzyl Salicylate	30
Beta Ionone	5	Alpha Ionone	10
Methyl Ionone	10	Methyl Ionone	10
Tonalide	70	Galaxolide	100
Hexyl cinnamic ald.	175	Aldehyde C6	1
		Tridecen nitrile	2
		Dimethyl heptanol	2
		Rose oxide	1
Total	1000	Total	1100

CLAIMS

1. A lavatory cleansing block having a perceived
approximately constant intensity of fragrance
5 throughout the life of the block, which comprises an
inner region comprising an inner fragrance and an
outer region comprising an outer fragrance which is
different from said inner fragrance, the inner
fragrance being present in a concentration by weight
10 which is less than or equal to 1.1 times the
concentration of the outer fragrance.
2. A block according to claim 1 wherein the inner
and outer regions are concentric.
- 15 3. A block according to claim 1 which has a square
cross section and which comprises one inner region and
four quarter circular outer regions forming a star-in-
a-square pattern.
- 20 4. A block according to any one of the preceding
claims wherein the inner fragrance is present in a
concentration which is less than or equal to the
concentration of the outer fragrance.
- 25 5. A block according to any one of claims 1 to 3
wherein the inner fragrance is present in a
concentration which is approximately equal to the
concentration of the outer fragrance.
- 30 6. A block according to any one of the preceding
claims wherein the inner fragrance and the outer
fragrance have the same scent.
- 35 7. A block according to any one of the preceding

claims wherein the concentration of the inner fragrance is from 7 to 15 wt% based on the total weight of the inner region.

- 5 8. A block according to any one of the preceding claims wherein the concentration of the outer fragrance is from 7 to 15 wt% based on the total weight of the outer region.
- 10 9. A block according to any one of the preceding claims wherein the inner and outer fragrances have at least one individual fragrance component in common.
- 15 10. A block according to claim 9 wherein all of the components in common between the inner and outer fragrances are present in the inner fragrance in a concentration by weight which is less than or equal to the concentration thereof in the outer fragrance.
- 20 11. Use of a block as defined in any one of the preceding claims as a lavatory cleansing block.
- 25 12. A method of preparing a block as defined in any one of claims 1 to 10 which comprises extruding the inner layer and outer layer to form a solid block.



Application No: GB 9814445.4
Claims searched: 1 to 12

Examiner: Michael Conlon
Date of search: 22 September 1998

Patents Act 1977

Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): CSD (DDA, DHX, DHZ, DJX, D123, D183)

Int Cl (Ed.6): C11D 17/00

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	US4683072 (Holdt) see the Table bridging columns 7 and 8	1 - 12

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

This Page Blank (uspto)

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ BLACK BORDERS
- ☐ IMAGE CUT OFF AT TOP, BOTTOM OR SIDES
- ☐ FADED TEXT OR DRAWING
- ☒ BLURRED OR ILLEGIBLE TEXT OR DRAWING
- ☐ SKEWED/SLANTED IMAGES
- ☐ COLOR OR BLACK AND WHITE PHOTOGRAPHS
- ☐ GRAY SCALE DOCUMENTS
- ☒ LINES OR MARKS ON ORIGINAL DOCUMENT
- ☐ REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY
- ☐ OTHER: _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

This Page Blank (uspto)